

FIGURE 2

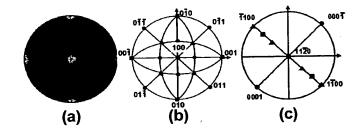


FIGURE 3

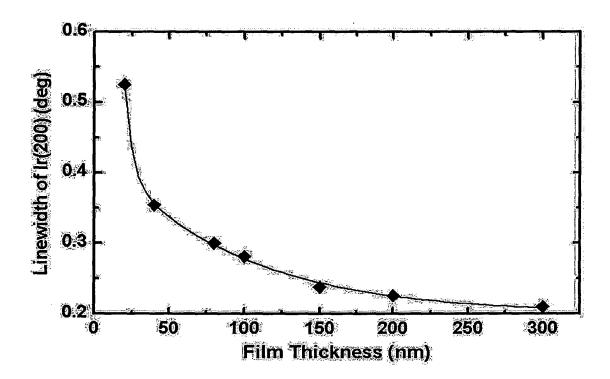


FIGURE 4

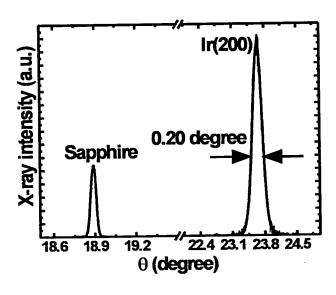


FIGURE 5

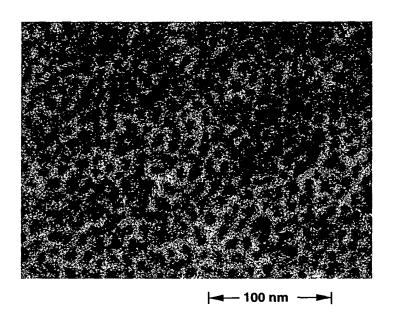


FIGURE 6

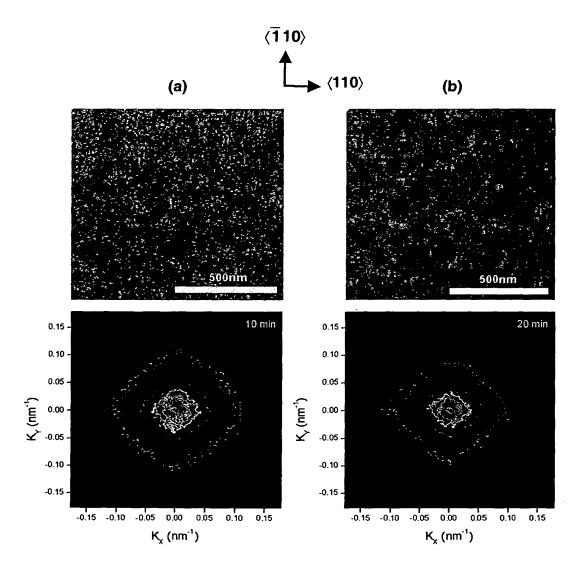


FIGURE 7

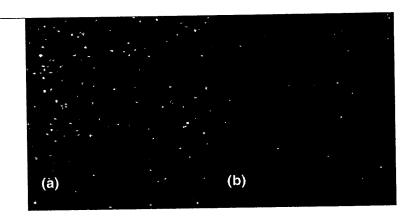


FIGURE 8

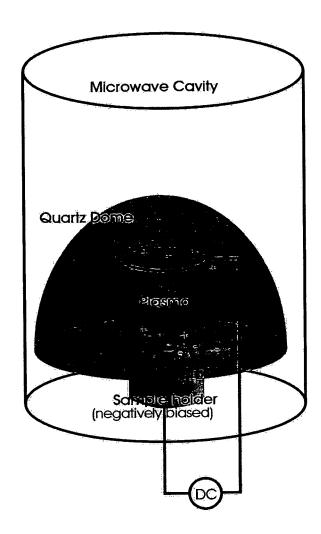
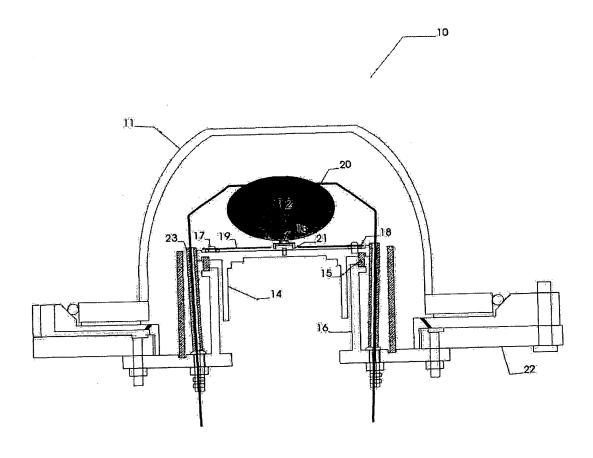


FIGURE 9A



- 11. Quartz dome12. Plasma discharge13. Secondary discharge
- 14. Isolated stage
- 15. Quartz Isolation ring
- 16. Grounded stage
- 17. Alumina peg
- 18. Alumina washer
- 19 Silicon mask

- 20. Bias ring and supports
  21. Molybdenum sample holder
  22. Vacuum chamber baseplate
  23. Quartz tubing to Isolate bias ring supports

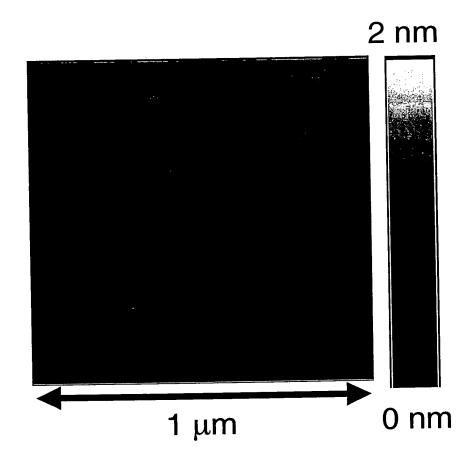


FIGURE 10

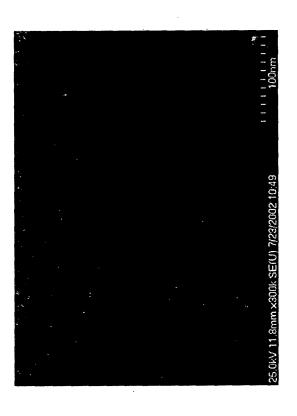


FIGURE 11

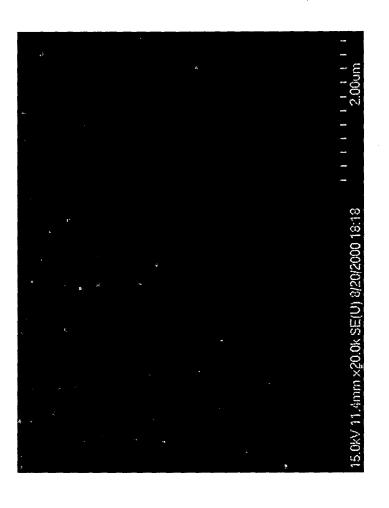
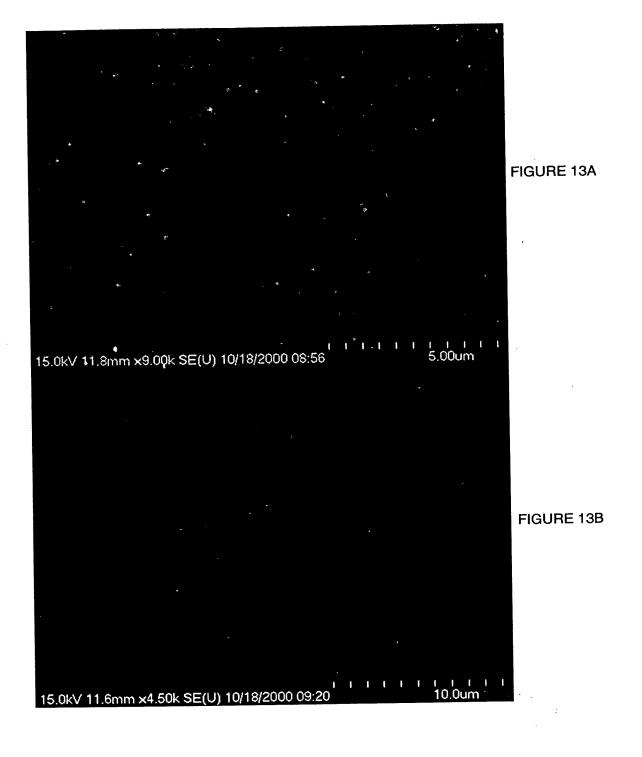


FIGURE 12



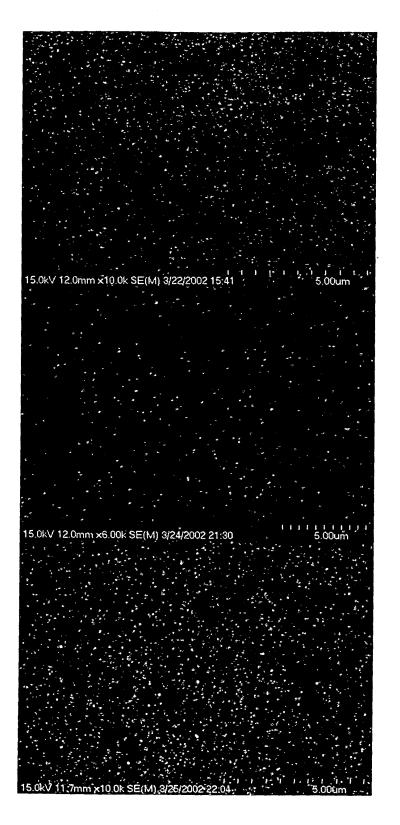


FIGURE 14A

FIGURE 14B

FIGURE 14C

:

Example of a sheet from the diamond database. A sheet is generated for each experiment of diamond growth. This experiment was carried out on 31 August 2000, and represents the growth of a 25  $\mu$ m thick diamond film in 36 hours.

SAMPLE ID:

32

DATE: CVD operator: 31-Aug-00

| OVE operator.  |
|--|
| SARRIAGEN PER DE LE LE PRESENTATION DE LE PROPERTIE DE LE PROPERTIE DE LA PROP |
| Precondition -   |
|  |
| The first contract was a state from the form to the contract of the contract o |
|  |
| Ion Gauge (torr): 3:2-E-06   |
| TON GAUGE (LONG) 3.2. E-00   |
|  |
| RGA (torr):  |
|  |
|  |
|  |
|  |
| PP(H <sub>2</sub> O):  |
|  |
|  |
|  |
| PP(N₂):  |
|  |
|  |
|  |
|  |
| E PP(O2)?  |
|  |
|  |
|  |
| Start time:  |
|  |
|  |
|  |
| RM temp ((C): 25   |
| RM temp (°C): 25   |
| Little and the state of the sta |
| DETERMINED TO A STATE OF THE PARTY OF THE PA |
| Rel. Hum (%): 60   |
| to the local design and the first of the second of the sec |
|  |

| G ometr   | y::     | i de la composition della comp |     |
|-----------|---------|--|-----|
| Cap #ID:  |         |  |     |
| C         | ap Size | <b>)</b>   |     |
| Ge        | eometr  | ў.,  |     |
| Post#:    |         |  |     |
|           |         |  |     |
| Bias Ring | #: 🚉 🗀  |  |     |
| Ring Heig |         | ): 3   | 2"∵ |
| Si mask#  | D:      |  |     |

### Sample:

| Substrate ID | 0818#3 |
|--------------|--------|
|              | 0818#3 |
|              |        |
|              |        |
|              |        |
|              |        |
|              |        |
|              |        |
| SUBSURIEUVDA |        |
|              |        |
|              |        |
|              |        |
|              |        |
|              |        |
|              |        |
| Samplemecane |        |
|              |        |
|              |        |

### **Notes/Comments:**

| ACCUMULATION OF THE PARTY OF TH | Tixture Contract   | THE RESERVE OF THE PARTY OF THE |
|--|--|--|
| Co   | XX.  | ENERGY SELECTION   |
| 100000000000000000000000000000000000000  | THE RESERVE  | TATAL SANGER SANGER SANGER SANGER  |
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| TAX DESCRIPTION OF TAXABLE PARTY.  | PARTY TO SPECIAL   | Louis None Land of the land  |
| Day Old Str.   | A STATE OF THE REAL PROPERTY.  | La Sandta Son acker anne etc.  |
|  | AND DESCRIPTION OF THE PARTY.  | the second second  |
| The state of the s | 2.5  | The state of the state of  |
| ALC: UNKNOWN   | The state of the state of  |  |
|  | Contract of the Contract of th |  |
| 10 12 Nov. 12 10 10  |  | SHOWSTERN  |
| The state of the s | THE REAL PROPERTY.   | water a manufacture  |
| * ** 1222 ** 12 ***  | A LOCK PORT OF   | Part of Courses and Course   |
| ALCOHOL: NO  | TOO.   |  |
| Name of the Party of the   | Market C. C.   | 200100000000000000000000000000000000000  |
| A CONTRACTOR OF THE PARTY OF TH | The second second  |  |
|  |  |  |
|  | AT THE REAL PROPERTY.  | Control of the second  |
| OF STATE OF  |  |  |
| NAMES OF STREET  | Zic Contain Contain  |  |
|  | (#<br>t: **  | (#<br>   |

Relation D:

## **INDEX**

| Input param     | eters         |          |          |          |
|-----------------|---------------|----------|----------|----------|
|                 | carburization | bias     | growth l | growth 2 |
| MW POWER        | 1500          | 1500     | 1500     | 1500     |
| MW %of full     | 14            | 14       | 14       | . 14     |
| GAS FLOW        |               |          | -        |          |
| :H <sub>2</sub> | 300           | 300      | 300      | 300      |
| CH <sub>2</sub> | - 6           | 6        | 3        | 3        |
| Other (ppm)     | f. 70 /       |          |          |          |
| TIME            |               | 60       | 90       | 2070     |
| PRESSURE        | 18            | 18       | 18       | 28       |
| BIAS VOLTS      |               | . 3. 379 |          | es à     |
| IMEAN           |               | 40.0     |          |          |
| TEMP AVG        |               | 693      | 625      | 730      |
| TC AVG          |               | 491      | 535      | 536      |

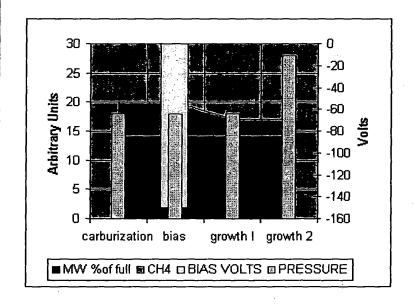


FIGURE 15

Second part of the database page. The graph shows the time-dependent temperature and bias current.

Images Origin Data

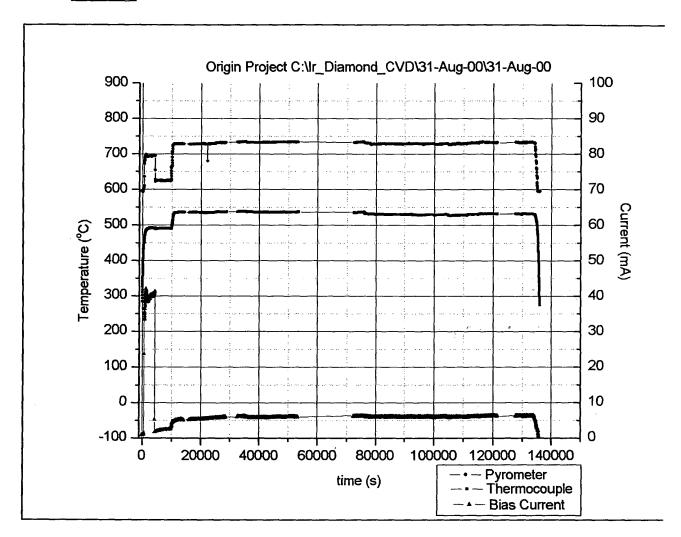


FIGURE 16

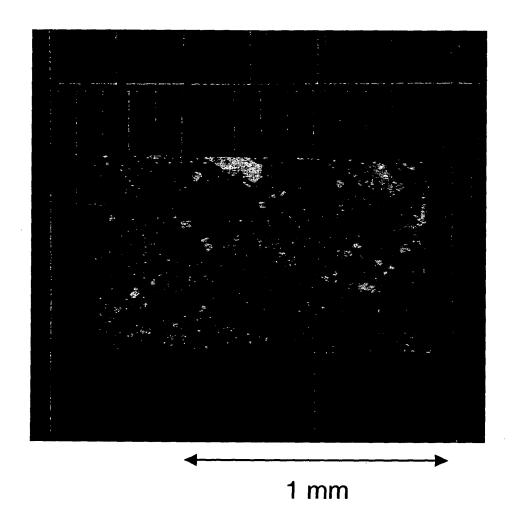


FIGURE 17

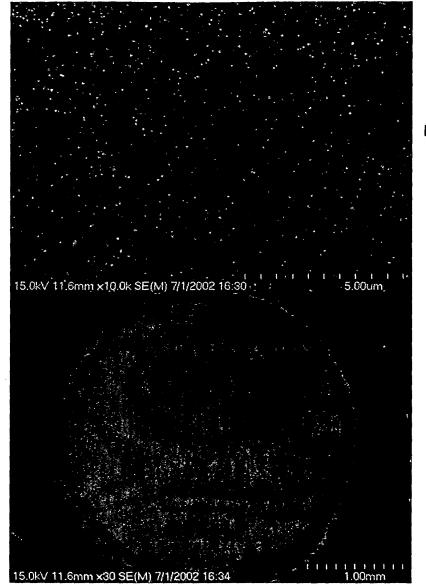
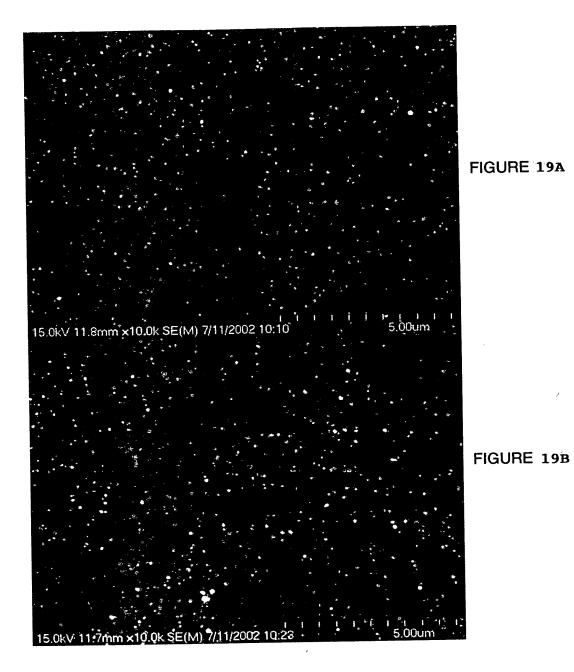


FIGURE 18A

FIGURE 18B



SAMPLE ID:

225

DATE:
CVD operator:

10-Apr-02

| CAD obei   | aw.  | and the second s |                        |
|--|--|--|------------------------|
| Pr condi   |  |  |                        |
| THE RESERVE THE SAME PROPERTY OF THE PARTY O | Call dela mini-reconstruction of the second  | 4:5!E <del>:</del> 07  |                        |
| Ion Gaug   |  |  |                        |
| RGA (torr  |  | 1.2.E-06   | × × ×                  |
|  | P(H <sub>2</sub> O):   | 5:00E-10   | ì                      |
|  |  |  | 1                      |
|  | PP(N <sub>2</sub> ):   | 1.00E-10   | NAME OF TAXABLE PARTY. |
|  | PP(O2):  | 1:00E-10   |                        |
|  | Ill on blid trees.   |  | 1                      |
| Start time   |  | 9:00:00 AM   | NAME OF                |
| A CONTRACTOR OF THE PARTY OF TH | Charles Valley Control   | 22   | 200                    |
| RM temp  | CONTROL OF THE PARTY OF THE PAR |  | P. Chickey             |
| Rel Hum  |  | 30   | Š                      |

| Geomet                                  | ry:      |      |       |  |
|---|----------|------|-------|--|
| Cap #ID                                 |          |      | 9 .   |  |
|   | Cap Size |      |       |  |
| 1 CH 1 CO 1 CH 1 CH 1 CH 1 CH 1 CH 1 CH | eometr   | y: r | ound: |  |
| Post # :                                |          |      |       |  |
| Bias Rin                                | a#       |      | 4     |  |
| Ring He                                 |          | ):   | 32    |  |
| Si mask                                 |          |      | 11    |  |

Sample:

| The state of the s |
|--|
| Substrate ID: 04052002#60  |
|  |
|  |
|  |
| The state of the s |
| Substrate type: Ir/a-ALO   |
| Called track of the control of the c |
| SUNSHAIDAVOR   |
|  |
| Constitution of the Consti |
| The state of the s |
| ACCULATION OF THE PROPERTY OF  |
| Sample location:   |
|  |
|  |

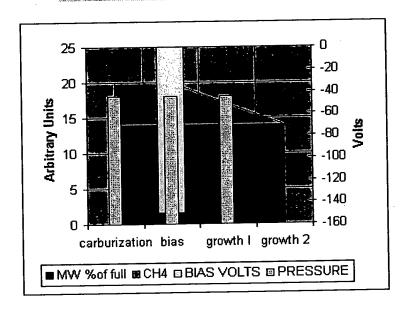
### N tes/Comments:

| 68 F   |
|--|
| 25.2   |
| 422  |
| -  |
| -  |
| 100  |
| 10   |
| 24.5   |
| 37   |
| 50   |
|  |
| 6.22   |
| 1122   |
| 0.00   |
| 457  |
| 2  |
|  |
| . 26   |
| 100  |
| XX   |
| XX   |
| DESCRIPTION OF THE PERSON OF T |
|  |
| The state of the s |

Relation live State

# **INDEX**

| Input paramete   | ers ·         | 24   |          |          |
|------------------|---------------|------|----------|----------|
| Çê               | irburization; | bias | growth I | growth 2 |
| MW POWER         | 1500          | 1500 | 1500     | 1500     |
| MW %of full      | 1.4           | 14   | 14       | 14       |
| GAŜ FLOW         |               |      |          |          |
| .'H₂             | 300           | 300  | 300      |          |
| (CH <sub>4</sub> | /6⊨           | -6   | 3'       |          |
| Other (ppm)      |               |      | 2,4      |          |
| TIME             | 12            | 60   | 180      |          |
| PRESSURE         | 18            | 18   | 118      |          |
| BIAS VOLTS       | 4.00          |      | e.       | N. A. C. |
| IMEAN            |               | 39.0 |          |          |
| TEMP AVG         | St. Oak       | 699  | 629      |          |
| TC AVG           |               | 471  | 470 -    |          |



# Images Origin Data

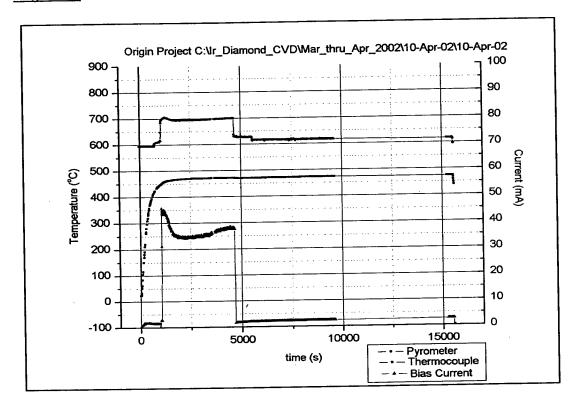


FIGURE 21

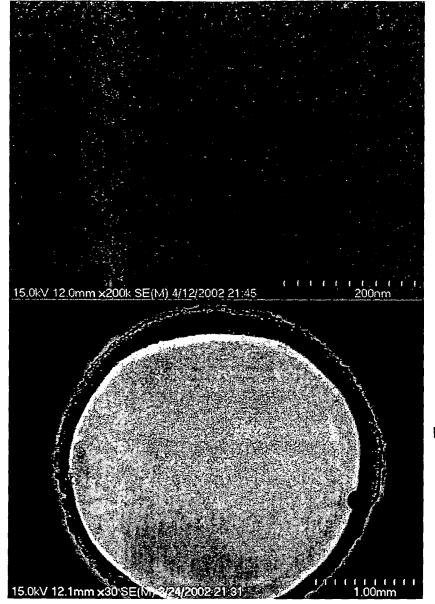


FIGURE 22

FIGURE 23